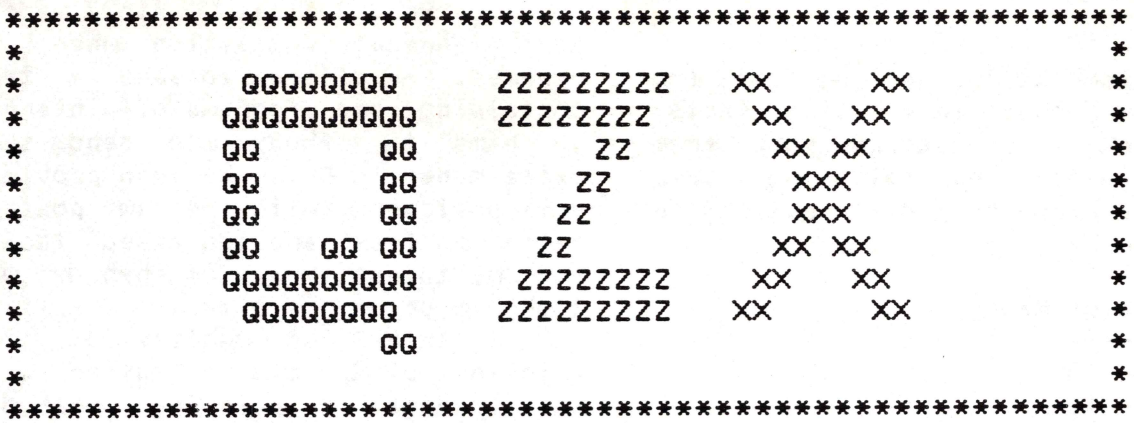
QQQQQQQ ZZZZZZZZZ XX XX
QQQQQQQQQ ZZZZZZZ XX XX
QQ QQ ZZ XX XX
QQ QQ ZZ XXX
QQ QQ ZZ XXX
QQ QQ QQ ZZ XX XX
QQQQQQQQQ ZZZZZZZ XX XX
QQQQQQQ ZZZZZZZZZ XX XX
QQ

The Journal Covering Amateur Radio & Sinclair Computers
ZX-80; Micro-Ace; ZX81; T/S 1000, 1500, & 2068; QL
Alex. F. Burr, K5XY, Publisher
2025 O'Donnell Drive
Las Cruces, New Mexico
88001

Volume 6 Number 7 ($1.50 / issue) June 1988

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EDITOR'S NOTES
K5XY

A look at the mailing list for QZX shows some interesting facts. About 40% of our readers come from seven states. The following table shows the readership distribution in these states.

State	% of Readers
CA	13
FL	10
PA	8
IL	6
MA	5
NY	5
VA	5

We have had readers at one time or another from all states and over 20 countries.

Four people took advantage of the offer which was made two months ago to extend subscriptions at the old rate before the increase, which is now effective. It is interesting to note that two of them were non-hams.

Mr. Arnold Nieuwenhoff, 16 Heritage Rd., Sutton, MA 01527 made a most unusual suggestion when he renewed. He offered to send a tape containing some programs of interest to hams to anybody who sends some extra money to QZX. He even provided some postcards (with the new postage rates no less) and addressed labels for me to notify him of anybody who took him up on his offer.

I think the quality of the printing of QZX did not suffer with the change in printing methods. However it now comes in separate sheets instead of folded in the middle and stapled in the middle. To help keep things straight if the upper left staple is removed, I have now placed headings on the top of each page and page numbers on the bottom. This issue has slightly larger margins to make it easier to punch holes for a three ring binder.

Issues will now have 10 pages in order to reduce postage costs. I had to wait for a dry day to mail the last issue to prevent the absorbed water from pushing the weight over one ounce. As it was, all the issues

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Call or write for a free catalog of products for the Timex Computer

sent to other countries had to be sent at the next weight increment because the envelopes required pushed the weight over the one ounce mark.

The Polish trading company mentioned in this column last month says that there is one difficulty in buying the T/S 2068 computer from them. It has to be picked up in Poland.

The T & C Services people, who have an ad in this issue, have made a special offer to QZX readers. They will give an additional 15% discount to any order which mentions QZX. By all means write to them and request their catalog. Say that you saw their ad in QZX to encourage them to continue advertising.

Another magazine which has carried a lot of Sinclair computer articles has stopped publishing. CTM announced that the June issue would be its last. Not only did it publish a lot of material on the Sinclair computers but most of that material was related to ham radio also. CTM will be missed. The departure from the publishing scene will have a direct effect on QZX too. For many issues QZX has carried a full page ad for CTM. The announcement came too late pull the ad from this issue, but the equivalent page in the next issue will be replaced with editorial content.

COMPUTERFACT 2068 - A REVIEW
K5XY

Most electronics people are familiar with the series of information folders on television equipment known as Sams Photofacts. Fewer people know about the similar series known as Computerfacts. But the series does exist, and it covers over 100 collections of information on computers and peripheral equipment. Included in that number are some of our computers.

The packet on the T/S 2068 is typical, although smaller than average, as is the computer. It does contain a lot of information, though. The one on the T/S 2068 contains over 30 pages including a large multiple page sheet containing a large schematic. The Computerfact package does not contain just a bunch of factory service hints but is the result of independent investigation by the Sams organization.

The fact set is divided into two parts. The smaller eight page part consists of preliminary service checks. This section starts off with a large two page photograph of the main circuit board with the major components identified. Next comes a large sheet containing a greatly simplified component placement diagram and a series of step-by-step service checks designed to localize the trouble. There is even a section on general operating instructions. Disassembly instructions are also given.

The main part of the Computerfact booklet starts off with a large (53 inch by 11 inch) circuit diagram. It is not just the factory provided circuit as has been published in QZX before, but a completely redrawn diagram done in the usual clear Photofact style. Of particular help are the many places where voltage readings are given. These readings, particularly the ones on all the pins of all the transistors (7), are a great help when troubleshooting. At 15 different points on the diagram little pictures are inserted which show the waveforms which can be expected if an oscilloscope were connected there.

A very useful feature is the outline drawings with pin identifications for all the IC's and transistors. The following pages provide a photograph of the main circuit board covered with a locator

grid. A useful and complete parts list is next. A logic chart showing the logic level at every pin of each IC is included. A really useful and informative one and a half page troubleshooting guide is included.

A lot of effort has gone into collecting this information and presenting it in an easy to use manner. Careful descriptions of the test equipment used and the test techniques are given so that the service person can distinguish differences due to malfunctions from different test conditions. It is clear that all this information is put into a standard format designed for larger computers. Hence there is quite a bit of general information on such irrelevancies as three prong power plugs, isolation transformers, and floppy disk drives.

I detected only two difficulties with the information presented. One was a minor misprint in a test program and the other was a difficulty in the keyboard operation instructions. The Computerfacts booklet tells the reader to execute the commands printed below the keys by pressing the SYMBL SHIFT key while holding down the CAPS SHIFT key (changing the K cursor to the E cursor) and then pressing the desired key while holding down the CAPS SHIFT key. This procedure will work most of the time, but a more reliable method is to hold the SYMBL SHIFT (rather than the CAPS SHIFT) key down while pressing the desired key. This method will work for the top row keys which will not respond correctly to the printed method.

The cost of this information has just been increased to over $21 which is quite a bit considering the current price of these computers. However if you want the maximum information about the electrical workings of your computer, here is the place to get it.

Computerfacts CC19, Sinclair/Timex Model 2068, 30+ pages, Howard W. Sams and Co., 4300 West 62nd St, Indianapolis, IN 46206. Also available on special order from your local Radio Shack store.

SHORT PACKET NOTES

K5XY

QZX has recently received several short notes from readers and others telling of various packet applications. These notes are summarized here.

The T/S 2068 can be put on packet very easily. See the September 1987 issue for details using the Z-SIO RS232 interface card and Specterm-64 software. I have had this combination working continuously for many months now with no trouble whatsoever. The software loads easily and there have been no crashes due to the hardware.

Ocassionaly some strange characters from net-rom repeaters will cause the terminal program to freeze up, but if you push the break key the program will carry on. If you push two other keys (any other keys) first, the program will really wander off into deepest memory and you will have to reset the computer and start over. But the break key will cure the problem. One could also identify the offending character and get the TNC software to filter the character out, but the problem develops so rarely that I have not taken the trouble to do this. The complete interface board is no longer sold, but the bare card is still available for a greatly reduced price. W4FCJ has recently completed one and he was very impressed with the 64 column display that this hardware and software combinaltion produced. He does have trouble getting the memory features for the software to work on packet.

He finds himself returning to his modified WC-2050 modem used with M-Term II software, especially when he wants to find and print out only a small part of the copy stored in the computer memory. This combination should work for the ZX 81, T/S 1000, and T/S 1500.

Smitty says the Specterm-64 software works with his converted WC-2050 too. It also appears to work nicely at 1200 baud with his MFJ-1270 TNC-2.

WA6DLI, Bob, has recently been using the new ultra small Heath TNC. It is not much bigger than the Modapter which he uses with his QL. He has written a complete review of this equipment which will appear in the next issue of QZX.

UNCLASSIFIED ADS

WANTED: UNCLASSIFIED ADS for publication in QZX. Cost is 1 cent for each keystroke (characters, etc.). Payment must be included with order. This is an excellent way to sell your program or unwanted equipment, ask for help, or find a specific program. Send your ad with payment to QZX, 2025 O'Donnell, Las Cruces, NM 88001.

FOR SALE: Index to QZX consisting of a book of xerox copies of all the covers since December 1982. Send $5.00 plus $1.00 shipping and handling ($2.00 if to a non-US address) to QZX, 2025 O'Donnell, Las Cruces, NM 88001.

FOR SALE: Book Inside CP/M Plus by D. E. Cortesi. Paperback 260 pages. Originally $18.45 now $9.00 postpaid in US. Very good for QL users with CP/M. Alex. F. Burr, K5XY, 2025 O'Donnell, Las Cruces, NM 88001.

FOR SALE: Book ZX81 BASIC Book by Robin Norman. Paperback 190 pages. Originally $12.95 now $6.00 postpaid in US. Simple and clear introduction to ZX81 BASIC. Alex. F. Burr, K5XY, 2025 O'Donnell, Las Cruces, NM 88001.

TIMEX GOODIES

1. Winky board II easy loading for TS1000/ZX81/TS1500
2. Z-dubber easy loading for TS1000/ZX81
3. Hunter EPROM/RAM expansion boards (3 blank)

This Timex/Sinclair equipment needs a good home with somebody who will use it themself. One item will be sent to the first reader who requests a specific item (second choice allowed), encloses shipping money, promises to write something for QZX about its use, and encloses a self-addressed stamped envelope for use in case the equipment is gone before the request makes it here. Bo Barry, W4GHV, 8118 Kensington Lane, Harrisberg, NC 28075.

FOR SALE: Book Easy-up Antennas for Radio Listeners and Hams by Edward Noll. Paperback (1988) 162 pages. Originally $16.95, now $11.00 postpaid in the US. A Sams publication. The title says it all. Alex. F. Burr, K5XY, 2025 O'Donnell, Las Cruces, NM 88001.

FOR SALE FREE: Seventy (70) Sincalir tapes, some blank, the whole lot for $10 shipping charge. Bo Barry, W4GHV, 8118 Kensington Lane, Harrisberg, NC 28075.

QZX Discount: 15% discount on all orders mentioning QZX. T & C Services (address in ad this issue.)

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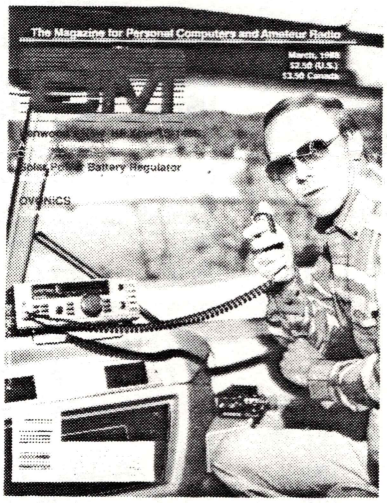

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2 x 1

TWO CLASSIC ON BOARD

by LU8MAD

I had some problems to meet place into well stuffed console of my TS-1000 system.

In the way to reduce space occupated by several interfaces and memory extension, all interconnected between they and TS1000, I had made a redisegned P.C. board in replacement of two commercial add - on.

I believe that enclosed layouts and parts-placement guide can be useful tc owners of RT-1A (1) of RTTy and CW-1 (1) of CW.

The new board include a source of regulated +5 volts. You must set the 5 V regulator type 7805 on solder side and parallel to board bending pins 1, 2 & 3 to right angle. Use heatsink (I had used a small aluminium plate of 2½ x 6 centimeters (see Fig 3))

In Fig 4, "J" is indicator of 1 Ohm resistor (only for cosmetic reason), can be replace with jumper of wire.

Also, you can place a jumper of isolated wire between A and A' of Fig 2.

You can rebuild the RTTY and CW parts of interface with the same materials of yours originals boards.

If you need, you can look circuits that CLIFF send you with interfaces. If you have missing yours schematics, see article in HAM RADIO (3) or contact CLIFF (2). 73's...Guillermo, LU8MAD.-

NOTES (1) RT-1A & CW-1 © by METCO
(2) CLIFF NUNNERY, NU4V, 313 Vaughn Street, FORT WALTON, FL 32548, USA
(3) HAM RADIO, April 1985

SOMEWHAT OF STATISTICS (Based on information extracted from " QZX FRIENDS" column)

YEAR	ZX80	ZX81	TS1000	TS1500	TS2068	QL
1983	3	34	26	--	--	--
1984	4	29	42	10	21	--
1985	1	17	32	4	16	--
1986	1	14	19	3	10	5
1987	4	9	13	5	12	3
Σ	13	103	132	22	59	8

PERCENTAGE	
ZX80	3.8 %
ZX81	30.6 %
TS1000	39.17%
TS1500	6.5 %
TS2068	17.5 %
QL	2.4 %

The value of this statistics is only as curiousness, and it's not the true percentage of total QZX readers.

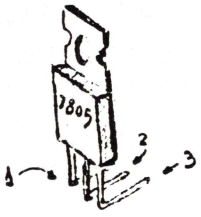

Fig 1

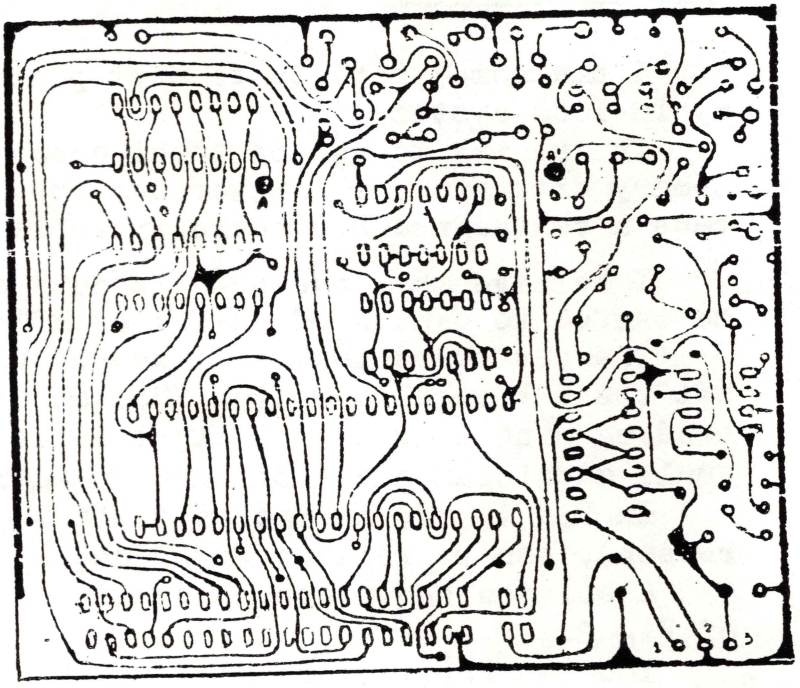

Fig 2

Fig 3

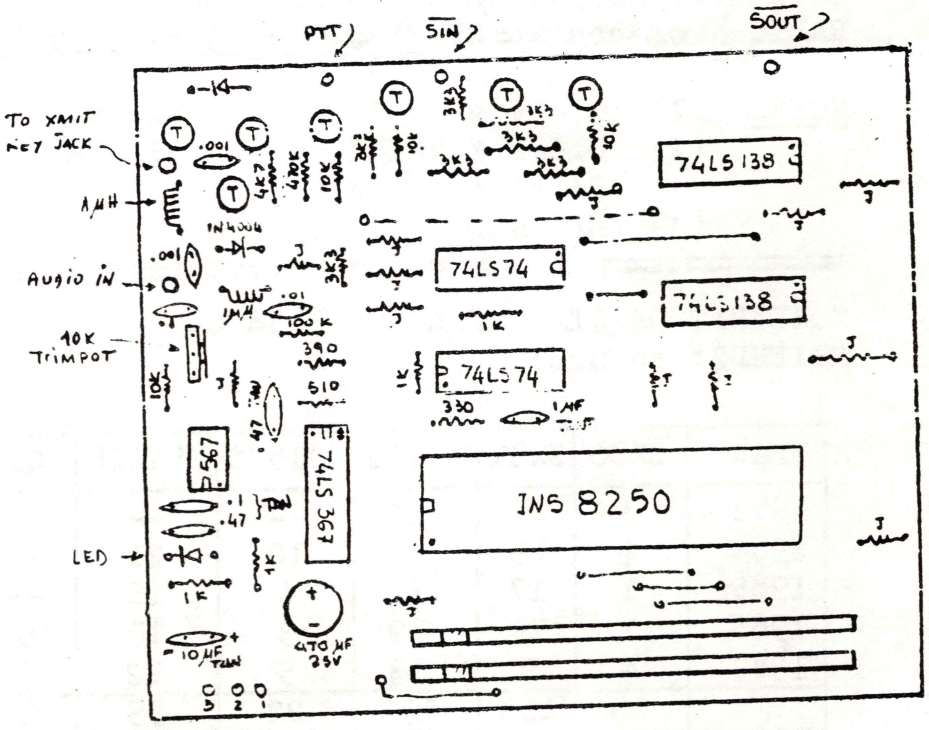

Fig 4

```
                BOBS BEAMER

LATITUDE AND LONGITUDE ARE:
  ALWAYS DECIMAL, NEVER MINUTES
  NORTH LAT AND WEST LON ARE +
  SOUTH LAT AND EAST LON ARE -

GOTO 275 NEXT TIME YOU LOAD IF
AT SAME QTH AS LAST TIME.
COPY TO PRINTER IF SCREEN FILLS
THEN "CONT" TO CONTINUE.

FOR PACKET WITH COMLINK I, THEN
STOP PROGRAM AND GOTO 3000.

HAVE FUN AND 73 FROM BOB, KV3Q

YOUR "QTH"?
```

```
   5 REM "BEAM"
  10 PRINT
  15 PRINT "                BOBS BEAMER
                "
  20 PRINT
  25 PRINT "LATITUDE AND LONGITU
DE ARE:"
  30 PRINT "  ALWAYS DECIMAL, NE
VER MINUTES"
  35 PRINT "  NORTH LAT AND WEST
 LON ARE +"
  40 PRINT "  SOUTH LAT AND EAST
 LON ARE -"
  45 PRINT
  50 PRINT "GOTO 275 NEXT TIME Y
OU LOAD IF"
  55 PRINT "AT SAME QTH AS LAST
TIME."
  60 PRINT "COPY TO PRINTER IF S
CREEN FILLS"
  65 PRINT "THEN ""CONT"" TO CON
TINUE."
  70 PRINT
  75 PRINT "FOR PACKET WITH COML
INK I, THEN"
  80 PRINT "STOP PROGRAM AND GOT
O 3000."
  85 PRINT
  90 PRINT "HAVE FUN AND 73 FROM
 BOB, KV3Q "
  95 PRINT
 190 PRINT "YOUR ""QTH""? ";
 195 INPUT A$
 200 PRINT A$
 205 PRINT "YOUR LAT: ";
 210 INPUT ALA
 215 PRINT ALA;
 220 PRINT ", LON: ";
 225 INPUT ALO
 230 PRINT ALO
 235 PRINT
 240 PRINT "PRESS ANY KEY TO CON
TINUE"
 245 PAUSE 35000
 250 CLS
 255 FAST
 260 PRINT "FROM: ";TAB 8;A$
 265 PRINT "LAT ";ALA;", ";"LON
";ALO
 270 PRINT
 275 PRINT "TO:  ";
 280 INPUT B$
 285 PRINT TAB 8;B$
 290 PRINT "LAT ";
 295 INPUT BLA
 300 PRINT BLA;", ";
 305 PRINT "LON ";
 310 INPUT BLO
 315 PRINT BLO
 320 LET L=ALO-BLO
 325 GOSUB 1000
 330 LET O=ATN ((COS (L*(PI/180)
))/TAN (BLA*(PI/180)))
 335 LET C=(180/PI)*ATN (SIN O*T
AN (L*PI/180)/COS ((ALA*PI/180)+
O))
 340 LET D=1.15*(ACS ((SIN (ALA*
PI/180))*(SIN (BLA*PI/180))+(COS
 (ALA*PI/180))*(COS (BLA*PI/180)
)*(COS (L*PI/180)))*(180*60/PI))
 345 GOSUB 2000
 350 PRINT "HEADING= ";INT (C+.5
);" DEG";";  ";INT (D+.5);" MILES
"
 355 PRINT
 360 GOTO 275
1000 IF L>180 THEN LET L=(L-360)
1010 IF L<-180 THEN LET L=(L+360
)
1020 IF L>=-180 AND L<=180 THEN
LET L=L
1030 RETURN
2000 IF L>0 AND C>0 THEN LET C=C
2010 IF L>0 AND C<0 THEN LET C=C
+180
2020 IF L<0 AND C>0 THEN LET C=C
+180
2030 IF L<0 AND C<0 THEN LET C=C
+360
2040 RETURN
3000 RAND USR 8200
```

```
                BOBS BEAMER

LATITUDE AND LONGITUDE ARE:
  ALWAYS DECIMAL, NEVER MINUTES
  NORTH LAT AND WEST LON ARE +
  SOUTH LAT AND EAST LON ARE -

GOTO 275 NEXT TIME YOU LOAD IF
AT SAME QTH AS LAST TIME.
COPY TO PRINTER IF SCREEN FILLS
THEN "CONT" TO CONTINUE.

FOR PACKET WITH COMLINK I, THEN
STOP PROGRAM AND GOTO 3000.

HAVE FUN AND 73 FROM BOB, KV3Q

YOUR "QTH"? NORTH EAST
YOUR LAT: 39.55, LON: 75.95

PRESS ANY KEY TO CONTINUE
FROM:    NORTH EAST
LAT 39.55, LON 75.95

TO:      LAS CRUCES
LAT 32.33, LON 107.82
HEADING= 264 DEG; 1838 MILES

TO:      BIRMINGHAM
LAT 33.5, LON 86.83
HEADING= 239 DEG; 733 MILES
```

73, K5XY

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